



(11)

EP 1 900 816 A3

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
26.03.2008 Bulletin 2008/13

(43) Date of publication A2:
19.03.2008 Bulletin 2008/12

(21) Application number: **07112205.5**

(22) Date of filing: **21.09.2000**

(51) Int Cl.:

C12N 15/12 <small>(2006.01)</small>	C07K 14/705 <small>(2006.01)</small>
C12N 15/11 <small>(2006.01)</small>	G01N 33/53 <small>(2006.01)</small>
G01N 33/68 <small>(2006.01)</small>	C07K 16/28 <small>(2006.01)</small>
A61K 38/17 <small>(2006.01)</small>	A61K 39/395 <small>(2006.01)</small>

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**

(30) Priority: **21.09.1999 US 155043 P**

(62) Document number(s) of the earlier application(s) in
accordance with Art. 76 EPC:
00965251.2 / 1 218 504

(71) Applicant: **Genetics Institute, LLC**
Cambridge, MA 02140 (US)

(72) Inventors:

- **Ling, Vincent**
Walpole, MA 02081 (US)
- **Dunussi-Joannopolulos, Kyriaki**
Belmont, MA 02478 (US)

(74) Representative: **Dörries, Hans Ulrich**
Df-mp Dörries, Frank-Molnia & Pohlmann
Trifstrasse 13
D-80538 München (DE)

(54) **GL50 molecules and uses therefor**

(57) The invention provides isolated nucleic acids molecules, designated GL50 nucleic acid molecules, which encode GL50 polypeptides. The invention also provides antisense nucleic acid molecules, recombinant expression vectors containing GL50 nucleic acid molecules, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in

which a GL50 gene has been introduced or disrupted. The invention still further provides isolated GL50 polypeptides, fusion proteins, antigenic peptides and anti-GL50 antibodies. Diagnostic, screening, and therapeutic methods utilizing compositions of the invention are also provided.

EP 1 900 816 A3



European Patent
Office

PARTIAL EUROPEAN SEARCH REPORT

Application Number

which under Rule 63 of the European Patent Convention EP 07 11 2205 shall be considered, for the purposes of subsequent proceedings, as the European search report

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
P,X	WO 00/46240 A (AMGEN INC. (US); YOSHINAGA STEVEN KIYOSHI (US)) 10 August 2000 (2000-08-10) * page 3, line 24 - page 9 * * page 9 - page 10; figure 2A * * page 14; figure 12 * * page 19, lines 33-35 * * page 49, line 21 - page 52, line 12 * * page 61, line 14 - page 64, line 13 * SEQ ID NO:6-8,14,19 * page 106 - page 111; claims * -----	2-8, 13-23, 25-34	INV. C12N15/12 C07K14/705 C12N15/11 G01N33/53 G01N33/68 C07K16/28 A61K38/17 A61K39/395
X	DATABASE EMBL Accession number AI614037 26 April 1999 (1999-04-26), "Mus musculus cDNA clone 5' similar to TR:075144 KIAA0653 protein" XP002157213 * the whole document * ----- -/-	4-6,8	TECHNICAL FIELDS SEARCHED (IPC) C12N C07K G01N A61K
INCOMPLETE SEARCH			
<p>The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC to such an extent that a meaningful search into the state of the art cannot be carried out, or can only be carried out partially, for these claims.</p> <p>Claims searched completely :</p> <p>Claims searched incompletely :</p> <p>Claims not searched :</p> <p>Reason for the limitation of the search: see sheet C</p>			
Place of search The Hague		Date of completion of the search 29 January 2008	Examiner Macchia, Giovanni
CATEGORY OF CITED DOCUMENTS		<p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>	
<p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p>			

11

EPO FORM 1503 03.82 (P04E07)



European Patent
Office

PARTIAL EUROPEAN SEARCH REPORT

Application Number
EP 07 11 2205

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
P,X, D	LING V. ET AL.: "Identification of GL50, a novel B7-like protein that functionally binds to ICOS receptor" THE JOURNAL OF IMMUNOLOGY, vol. 164, no. 4, 15 February 2000 (2000-02-15), pages 1653-1657, XP002156735 * the whole document *	2-6,8, 13,14,26	
P,X, D	YOSHINAGA S.K. ET AL.: "T-cell co-stimulation through B7RP-1 and ICOS" NATURE, vol. 402, 16 December 1999 (1999-12-16), pages 827-832, XP002157212 * the whole document *	2-8, 13-18, 25,26	
			TECHNICAL FIELDS SEARCHED (IPC)
X,D	DATABASE EMBL Accession number AB014553 15 July 1998 (1998-07-15), "Homo sapiens mRNA for KIAA0653 protein, partial cds." XP002156738 * the whole document *	3-6,8,13	
X,D	-& ISHIKAWA K. ET AL.: "Prediction of the coding sequence of unidentified human genes. X. The complete sequences of 100 new cDNA clones from brain which can code for large proteins in vitro" DNA RESEARCH, vol. 5, 1998, pages 169-176, XP002089186 * page 175, line 2 * * page 176, left-hand column, paragraph 2 *	3-6,8,13	
X	DATABASE EMBL Accession number R23544 23 April 1995 (1995-04-23), XP002156739 * the whole document *	4-6,8	
	-/--		



European Patent
Office

PARTIAL EUROPEAN SEARCH REPORT

Application Number
EP 07 11 2205

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	-& HENRY J. ET AL.: "Cloning, structural analysis, and mapping of the B30 and B7 multigenic families to the major histocompatibility complex (MHC) and other chromosomal regions" IMMUNOGENETICS, vol. 46, 1997, pages 383-395, XP000971256 * page 388; figure 6 * TU-D * page 389, right-hand column, paragraph 5 * ----- WO 99/15553 A (BUNDESREPUBLIK DEUTSCHLAND (DE); ROBERT KOCH INSTITUT (DE); KROCZEK R.) 1 April 1999 (1999-04-01) * page 7, lines 20-34 * * page 26 - page 28; claims * ----- HUTLOFF A. ET AL.: "ICOS is an inducible T-cell co-stimulator structurally and functionally related to CD28" NATURE, vol. 397, 21 January 1999 (1999-01-21), pages 263-266, XP002156736 * the whole document * -----		
			TECHNICAL FIELDS SEARCHED (IPC)



Although claims 25, 27-29 (insofar as in vivo methods of treatment of the human/animal body by therapy are concerned, see pages 80-89) and 20-24 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

Claim(s) not searched:
20-22 all in part

Reason for the limitation of the search:

Present claims 20-22 relate to a method for modulating the immune response by means of a GL50 modulating agent, defined by reference to the following desirable characteristics or properties: (1) the ability to upmodulate the immune response; (2) the ability to downmodulate the immune response.

The claims cover all the agents having this characteristics or properties, whereas the application provides support within the meaning of Article 84 EPC and disclosure within the meaning of Article 83 EPC for only a very limited number of such agents.

In fact, on pages 6, 80-89 and 111-116, present application refers to GL50-specific antibodies, to GL50-derived polypeptides, to GL50 nucleic acids (i.e. antisense molecules), to peptides, peptidomimetics or other small molecules, to a GL50 ligand, to GL50 agonists, antagonists or peptidomimetics thereof and to GL50 inhibitors.

However no specific peptides, peptidomimetics or small molecules, ligands, agonists, antagonists or inhibitors are disclosed or defined in present application as having one of said specific characteristics or properties.

Therefore, in the present case the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible.

Independent of the above reasoning, the claims also lack clarity (Article 84 EPC). An attempt is made to define the agent by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible.

Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to methods involving a GL50-derived polypeptide (examples 12 and 13), GL50-specific antibodies and antisenses.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 07 11 2205

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

29-01-2008

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0046240	A	10-08-2000	AU 773954 B2 10-06-2004
			AU 2859200 A 25-08-2000
			CA 2362126 A1 10-08-2000
			CN 1346370 A 24-04-2002
			EP 1149114 A2 31-10-2001
			HU 0105337 A2 29-04-2002
			JP 2002539770 T 26-11-2002
			NZ 513349 A 26-03-2004
WO 9915553	A	01-04-1999	TW 274058 B 21-02-2007
			AU 752433 B2 19-09-2002
			AU 1332099 A 12-04-1999
			CA 2305350 A1 01-04-1999
			EP 1017723 A2 12-07-2000
			ES 2279585 T3 16-08-2007
			JP 2001517425 T 09-10-2001
			US 7259247 B1 21-08-2007